

REMARKS

Status of the Claims.

Claims 1-50 are pending with entry of this amendment, claims 51-97 being cancelled and no claims being added herein. Claims 1, and 27 are amended herein. These amendments introduce no new matter. Support is replete throughout the specification (*see, e.g.,* the claims as originally filed, Figure 1, Figure 2, paragraph 0066 on page 16, and the like).

Information Disclosure Statement.

A supplemental Information Disclosure Statement (IDS) is provided herewith. The references cited on accompanying form PTO-1449 are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

No inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Obviousness-Type Double Patenting.

The rejection of claims 1-50 under the judicially created doctrine of obviousness-type double patenting in light of claims 1-22 of U.S. Patent NO: 7,005,237 (the '237 patent) was maintained. In particular, the Examiner alleged that "[t]he linking groups taught by Lindsey continue to anticipate the claims because the claims do not require **direct** attachment of particular groups to one another." Applicants traverse.

Claim 1, as amended herein recites:

Claim 1 (Currently amended): A method of patterning redox-active polymers on a surface to form surface-bound redox-active polymers, said method comprising:

providing redox-active molecules bearing at least a first reactive site or group and a second reactive site or group, wherein said first reactive site or group is a species reactive with said second reactive site or group; and

contacting said surface with said redox-active molecules, where said contacting is under conditions that result in attachment of said redox-active molecules to said surface via said first reactive site or group, and

attachment of redox-active molecules directly to each other via a reaction between the first reactive site or group on one redox-active molecule and the second reactive site or group on the attached redox-active molecule, thereby forming a polymer attached to said surface where said polymers comprise at least two of said redox-active molecules.

The presently claimed invention is thus directed to methods of creating polymers of redox active molecules attached to a surface. Formation of the polymers is accomplished by providing redox active molecules that have a first reactive site or group and a second reactive site or group where the first reactive site or group and the second reactive site or group are reactive with each other. When the subunits contact each other attachment (polymerization) of the redox active molecules to each other occurs via:

attachment of redox-active molecules directly to each other via a reaction between the first reactive site or group on one redox-active molecule and the second reactive site or group on the attached redox-active molecule, thereby forming a polymer

as recited in the claims.

Thus, for example, if the redox active molecule in claim 1 had the formula



X^1 and Y^2 would be reactive with each other so reaction of multiple redox-active molecules could form a polymer, e.g.:



This is expressly captured in the claims by the language quoted above.

In contrast, the '237 patent teaches the use of charge storage molecules (CSMs) that have functional groups that do not react with each other. Thus, for example, at column 6, lines 33-37, the '237 patent states:

In step 2, a charge-storage molecule (CSM) bearing a functional group X^1 complementary to that of Y^1 (but not to Y^2) is then added, giving binding of X^1 and Y^1 and attaching the CSM to the linker

Consequently the CSMs of the '237 patent do not polymerize. This is illustrated by the structure shown in Figure 2 of the '237 patent that shows a method of producing a monomeric (single) CSM attached to a surface. In contrast, the structures shown in the Formulas of the presently pending application show **polymers of redox-active molecules (M_n).**

Accordingly, claims 1-22 of the '237 patent fail to teach or suggest the presently claimed invention. Moreover, the '237 expressly teaches away from the presently claimed invention. Accordingly, the obviousness-type double patenting rejection should be withdrawn.

35 U.S.C. §102.

Claims 1-50 were rejected under 35 U.S.C. §102e) as allegedly anticipated by Lindsey (U.S. Patent 7,005,237). As explained above, the presently claimed methods pertain to the polymerization of redox-active molecules to form polymerized redox-active molecules attached to a substrate. In certain embodiments this is facilitated by providing redox-active molecules each having a first and a second reactive site that are reactive with each other. The molecules can then be coupled to a surface (*e.g.*, via a first reactive site and other redox-active molecules couple to the attached redox-active molecule (*i.e.*, via reaction of the first reactive site with the second reactive site).

To clarify this, claims 1 and 27 are amended herein to recite:

attachment of redox-active molecules **directly to each other via a reaction between the first reactive site or group on one redox-active molecule and the second reactive site or group on the attached redox-active molecule,** thereby forming a polymer

In contrast, the '237 patent teaches the use of charge storage molecules (CSMs) that have functional groups **that do not react with each other and thus, do not polymerize.** The '237 patent fails to disclose the presently claimed invention. Accordingly, the rejection under 35 U.S.C. §102(e) should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Should the Examiner seek to maintain the rejections, Applicants request a telephone interview with the Examiner and the Examiner's supervisor.

If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (510) 267-4161.

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Respectfully submitted,

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